

1     WHAT IS CLAIMED IS

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1. A method of fabricating a semiconductor device, comprising the steps of:

forming an electronic circuit on a wafer in a region defined by a scribe line, said wafer carrying  
10 a first electrode thereon;

attaching a circuit substrate carrying thereon a predetermined conductor pattern, on said wafer, said circuit substrate carrying a second electrode and a third electrode, said step of  
15 attaching said circuit substrate including a step of aligning said circuit substrate with respect to said electronic circuit in said wafer;

interconnecting said first electrode on said wafer and second electrode of said predetermined  
20 conductor pattern by a wire bonding process;

forming a spherical electrode on said third electrode; and

dicing said wafer along said scribe line.

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2. A method as claimed in claim 1, wherein said step of attaching including a step of bonding  
30 said circuit substrate to said wafer by an adhesive.

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3. A method as claimed in claim 1, wherein said step of attaching said circuit substrate includes the steps of: placing said circuit substrate on said

1 wafer; aligning said circuit substrate with respect to  
said wafer; and lifting said circuit substrate in a  
direction generally perpendicular to said wafer by  
introducing a resin to a space between said wafer and  
5 said circuit substrate.

10 4. A method as claimed in claim 1, further  
comprising a step of encapsulating a bonding wire used  
in said wire bonding step and said first and second  
electrodes by a resin.

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5. A method as claimed in claim 4, wherein  
said step of dicing along said scribe line is  
20 conducted along said resin.

25 6. A method as claimed in claim 1, further  
comprising a step of providing a resin along said  
scribe line, and wherein said step of dicing is  
conducted along said resin.

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7. A method as claimed in claim 1, wherein  
said circuit substrate is formed of a polyimide tape  
35 carrying thereon a conductor pattern.

1           8. A method as claimed in claim 1, wherein  
said circuit substrate is formed of a glass epoxy  
carrying a conductor pattern.

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          9. A method as claimed in claim 1, wherein  
said wire bonding process is conducted first by  
10 bonding a first end of a bonding wire to said first  
electrode on said wafer and subsequently by bonding a  
second end of said bonding wire to said second  
electrode on said circuit substrate.

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          10. A method as claimed in claim 1, wherein  
said spherical electrode is formed by a solder bump.

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          11. A semiconductor device, comprising:  
25       a semiconductor chip having a top surface,  
said semiconductor chip carrying a first electrode;  
      a circuit substrate attached to a top  
surface of said semiconductor chip, said circuit  
substrate carrying thereon a predetermined conductor  
30 pattern including a second electrode and a third  
electrode;

      a resin layer intervening between said top  
surface of said semiconductor chip and said circuit  
substrate;

35       a spherical electrode provided on said  
circuit substrate in correspondence to said third  
electrode;

1           a bonding wire electrically interconnecting  
said second electrode of said predetermined conductor  
pattern on said circuit substrate and said first  
electrode on said semiconductor chip; and  
5           a resin potting encapsulating said bonding  
wire including said first and second electrodes,  
            said chip and said resin potting being  
defined by a common edge surface substantially  
perpendicular to a principal surface of said  
10          substrate.

15           12. A semiconductor device as claimed in  
claim 11, wherein said resin layer is an adhesive  
layer.

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            13. A semiconductor device as claimed in  
claim 11, wherein said resin layer has a composition  
substantially identical with a composition of said  
25          resin potting.

30           14. A semiconductor device as claimed in  
claim 11, wherein said circuit substrate is formed of  
a glass epoxy.

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            15. A semiconductor device as claimed in

1 claim 11, wherein said circuit substrate is formed of  
a polyimide film.

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16. A semiconductor device, comprising:  
a semiconductor chip having a top surface,  
said semiconductor chip carrying a first electrode;  
10 a circuit substrate attached to a top  
surface of said semiconductor chip, said circuit  
substrate carrying thereon a predetermined conductor  
pattern including a second electrode and a third  
electrode;  
15 a spherical electrode provided on said  
circuit substrate in correspondence to said third  
electrode;  
a bonding wire electrically interconnecting  
said second electrode of said predetermined conductor  
20 pattern on said circuit substrate and said first  
electrode on said semiconductor chip;  
a resin potting encapsulating said bonding  
wire including said first and second electrodes;  
a resin side wall cover covering a side wall  
25 of said circuit substrate;  
said chip having a side wall substantially  
flush to an outer surface of said resin side wall  
cover, said side wall of said chip being substantially  
perpendicular to a principal surface of said chip.  
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17. A semiconductor device as claimed in  
35 claim 16, wherein said resin potting and said resin  
side wall cover have a substantially identical  
composition.